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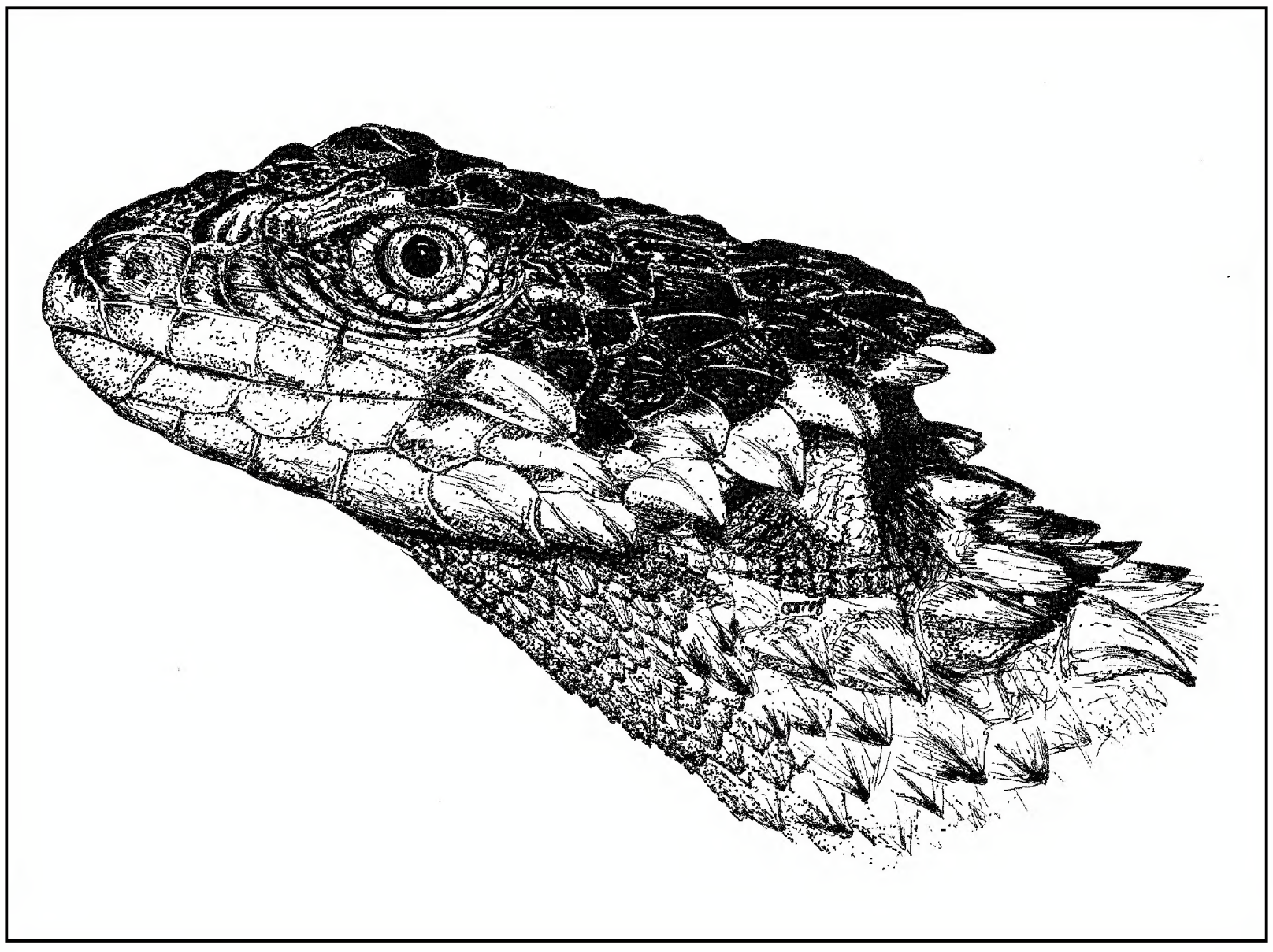

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Cover: Sungazer lizard, *Smaug giganteus*. Drawing used with the kind permission of the artist, Thomas Guttmann, and the *Österreichischen Gesellschaft für Herpetologie*.

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Armadillo Lizards and Sungazers: The Names Are Changed but the Lizards Remain the Same

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In 2011, science felt the need to tamper with the taxonomy. of my two favorite lizard species, the armadillo lizards and the sungazers of South Africa. I've seen this happen with other species of lizards throughout the years, but really gave little thought to the process. After all, it never affected my articles or the labor-intensive signs I have carefully created for educational purposes. But now science has finally came knocking on my door with a classy name change to better describe and exemplify these two species. I was totally unaware of this change until this week, when it was brought to my attention. I thought this knowledge important enough to share it in this brief article, so we might all be brought up to speed, scientifically.

The armadillo lizard, previously known for decades as *Cordylus cataphractus*, is now *Ouroborus cataphractus*. This name change better describes its unique behavior of grabbing its tail and curling up into a ball when threatened by danger, a behavior only noted in this particular lizard. A few examples of an ouroboros will immediately identify the similarities between the myth and the lizard itself. The sungazer lizard was *Cordylus giganteus*, but is now known as *Smaug giganteus*. This name change is a bit more whimsical, as Smaug is the dragon from the J.R.R. Tolkien book *The Hobbit*. Whoever made this suggestion certainly has a sense of humor. Included below are some visual examples of Smaug and the ouroboros to better understand the origins of just where these scholars and scientific dignitaries were trying to make their point.

For details on the new taxonomy for the family Cordylidae and a full phylogenetic tree, see Stanley et al. (2010).

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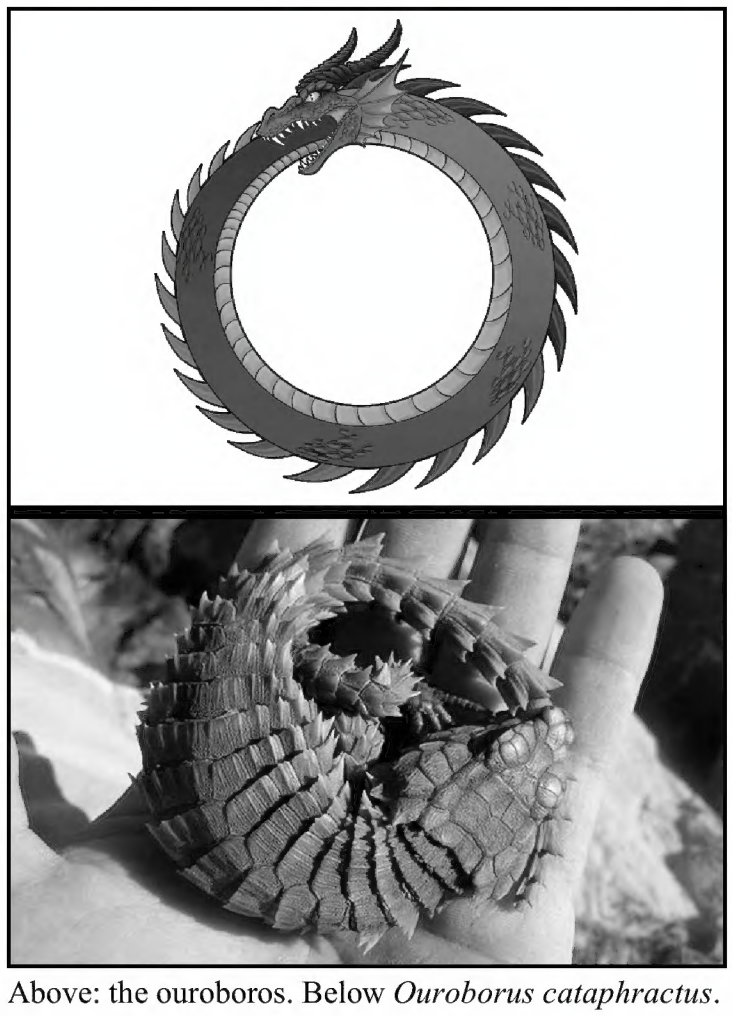
Stanley, E. L.., A. M. Bauer, T. R. Jackman, W. R. Branch and P. Le F. N. Mouton. 2010. Between a rock and a hard polytomy: Rapid radiation in the rupicolous girdled lizards (Squamata: Cordylidae). Molecular Phylogenetics and Evolution 58:53-70.

Two of the Name Changes in the Family Cordylidae

Cordylus cataphractus is now *Ouroborus cataphractus*

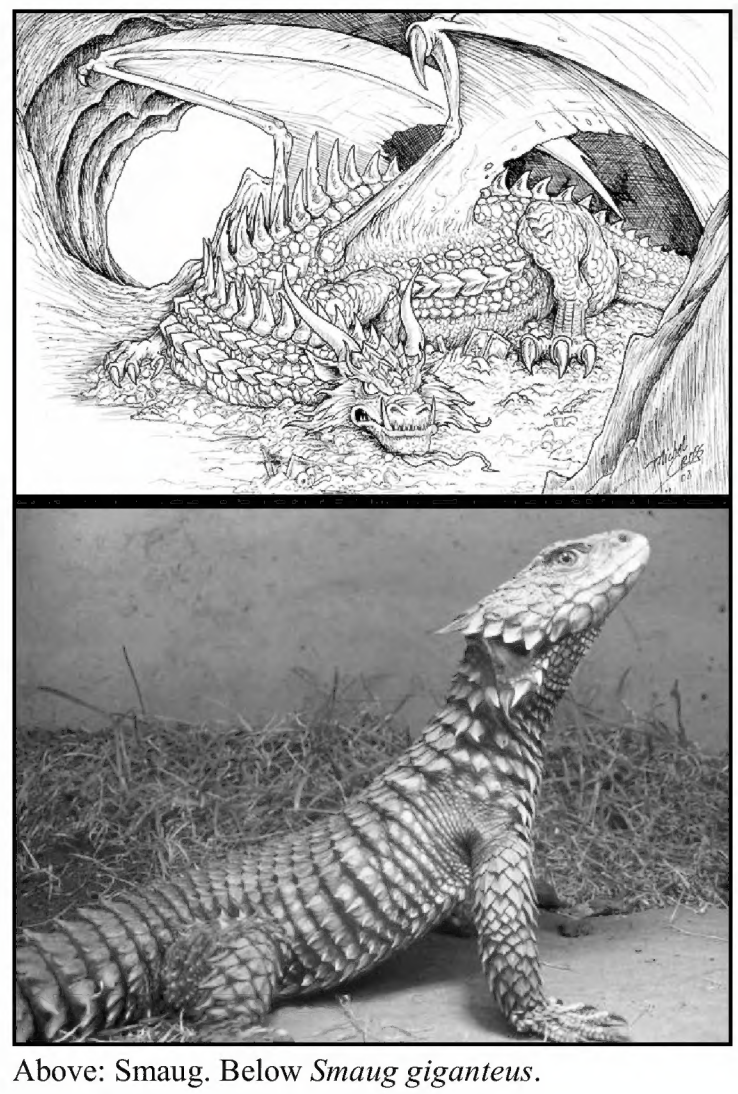
The ouroboros is an ancient symbol depicting a serpent or dragon with its own tail in its mouth. The name comes directly from the Greek οὐροβόρος, which means "devouring its tail." The ouroboros has been important in religious and mythological symbolism; it was used in ancient Egypt, Greece, India and Mexico. It was depicted in the 14th and 15th centuries of the Middle Ages, also 19th century Haiti. In Freemasonry, the ouroboros is displayed on numerous Masonic seals, frontispieces and other imagery, especially from the 18th century.



Above: the ouroboros. Below *Ouroborus cataphractus*.

Cordylus giganteus is now *Smaug giganteus*

Smaug, one of the last great dragons of Middle-earth, features in the novel *The Hobbit* by J.R.R. Tolkien. Smaug's scaly hide is invulnerable, but his softer underside is more vulnerable to attack. Tolkien created numerous pencil sketches and two pieces of more detailed artwork portraying Smaug. The latter were detailed ink and watercolor sketches.



Above: Smaug. Below *Smaug giganteus*.

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Notes on Reproduction in Roundtail Horned Lizards, *Phrynosoma modestum* (Squamata: Phrynosomatidae) from New Mexico

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Abstract

A histological examination of gonadal material from roundtail horned lizards, *Phrynosoma modestum* from New Mexico was conducted. My finding of a 37 mm SVL male undergoing spermiogenesis is a new minimum size at maturity for *P. modestum* males. Mean clutch size for five females was 8.6 ± 4.0 SD, range = 5–13. Histological information is presented that multiple clutches are produced. The timing of the *P. modestum* ovarian cycle may be slightly earlier in New Mexico as opposed to southeastern Arizona and northeastern Sonora. My finding of one female with a clutch of five is a new minimum clutch size record for *P. modestum*.

Roundtail horned lizards, *Phrynosoma modestum* Girard, 1852, range from northern New Mexico to San Luis Potosí, Mexico, and from west-central Texas to southeastern Arizona (Stebbins, 2003). The most detailed study on the reproduction of *P. modestum* is by Howard (1974). Anecdotal information on the reproductive biology of *P. modestum* is in Lewis (1950), Stebbins (1954, 2003), Bundy et al. (1955), Minton (1959), Smith et al. (1963), Parker (1973), Pianka and Parker (1975), Vitt (1977), Behler and King (1979), Degenhardt et al. (1996), Sherbrooke (2000), Brennan and Holycross (2006), and Hodges (2009). The purpose of this note is to provide additional information on the reproductive cycle of *P. modestum* from a histological examination of gonadal material from museum specimens. Due to the difficulty in justifying collection of monthly lizard samples, utilization of museum collections for obtaining reproductive data has become increasingly important.

Methods

A sample of 77 *P. modestum* consisting of 27 adult males, (mean snout–vent, SVL = 50.7 mm ± 7.4 SD, range = 37–62 mm); 37 adult females, (mean SVL = 55.8 mm ± 8.8 SD, range = 36–70 mm), and 13 subadults, (mean SVL = 29.7 mm ± 3.6 SD, range = 24–34 mm) was examined from the herpetology collections of the Natural History Museum of Los Angeles County (LACM), Los Angeles, California, USA and the Museum of Southwestern Biology (MSB), University of New Mexico, Albuquerque, New Mexico, USA. *Phrynosoma modestum* were collected 1930 to 2007. Specimens examined are listed by county in the appendix.

A small incision was made in the lower part of the abdomen and the left gonad was removed for histological examination. Gonads were embedded in paraffin and sections were cut at 5 μm, and stained with Harris hematoxylin followed by eosin counterstain (Presnell and Schreibman, 1997). Histology slides were deposited in LACM and MSB. Enlarged ovarian follicles (> 4 mm length) or oviductal eggs were counted. An unpaired *t*-test was used to test for differences between male and female SVLs using Instat 3 (Graphpad, San Diego, CA).

Results

Monthly stages in the testicular cycle are shown in Table 1. Three stages of the testicular cycle were present: (1) regressed, seminiferous tubules are at their smallest sizes and contain spermatogonia and interspersed Sertoli cells; (2) recrudescence, a proliferation of germ cells occurs in the form of spermatogonia, primary and secondary spermatocytes, for the next period of spermiogenesis; (3) spermiogenesis, lumina of the seminiferous tubules are lined by sperm or clusters of metamorphosing spermatids. The smallest reproductively active male (spermiogenesis) measured 37 mm SVL (LACM 101581) and was collected in May. This represents a new minimum size for reproductively active *P. modestum* males.

The mean body size (SVL) of my female sample was significantly larger than the mean (SVL) of my male sample (unpaired *t*-test, $t = 3.0$, $df = 64$, $P = 0.004$). Monthly stages in the ovarian cycle are in Table 2. Five stages were present: (1) quiescent, no yolk deposition in progress; (2) enlarged ovarian follicles (> 4 mm); (3) oviductal eggs; (4) corpus luteum present; (5) corpus luteum present with concomitant yolk deposition for a subsequent clutch. Females were reproductively active beginning in April (no March females were examined), continuing into July.

Table 1. Monthly stages in the testis cycle of 27 *Phrynosoma modestum* from New Mexico.

Month	*n*	Regressed	Recrudescence	Spermiogenesis
April	2	0	0	2
May	3	0	0	3
June	9	0	0	9
July	5	0	0	5
August	2	1	1	0
September	3	3	0	0
October	3	0	3	0

Table 2. Monthly stages in the ovarian cycle of 37 *Phrynosoma modestum* from New Mexico.

Month	*n*	Quiescent	Enlarged Follicles > 4 mm	Oviductal eggs	Corpus luteum	Corpus luteum and yolk deposition
April	4	0	1	1	1	1
May	4	3	0	1	0	0
June	2	1	0	0	1	0
July	8	4	4	0	0	0
August	9	9	0	0	0	0
September	8	8	0	0	0	0
October	2	2	0	0	0	0

Mean clutch size for five females is 8.6 ± 4.0 SD, range = 5–13. Five is a new minimum clutch size for *P. modestum* (LACM 101577, from July). Obtaining a reliable clutch size was problematical for (LACM 133251), from July as this lizard contained 4 ovarian follicles (2 on each side) that measured 4 mm and one on the right ovary that measured 2 mm. It was not possible to know if this 2 mm follicle would have enlarged and ovulated, which would have brought the clutch to five eggs or if this clutch would have consisted of four eggs. Due to this unresolvable issue, I did not include it in my calculation of a mean clutch size for *P. modestum*. This was also the smallest reproductively active female (SVL = 44 mm). The presence of corpora lutea from a previous clutch and concomitant yolk deposition for a subsequent clutch in (LACM 4363 from April) is histological evidence that multiple clutches may be produced in the same reproductive season.

Two of my subadult sample (LACM 19693) from August and (MSB 1328) from October both measured 24 mm SVL and were within the size of *P. modestum* neonates (21–25 mm) in Howard (1974).

Discussion

The two largest clutch sizes of 13 eggs, in my study, were produced by *P. modestum* early in the reproductive season (April and May). Those from July (n = 3, mean = 5.7 ± 0.58 SD, range = 5–6) were smaller. Goldberg (1975) similarly reported a decrease in monthly mean clutch sizes in *Sceloporus vandenburgianus* (as *S. graciosus*) late in the reproductive season and postulated this might be due to a diversion of nutrients into fat storage for the coming winter. The timing of the *P. modestum* ovarian cycle may be slightly earlier in New Mexico as I reported oviductal eggs from April to July whereas Howard (1974) reported oviductal eggs present May to August from southeastern Arizona and northeastern Sonora.

In conclusion, I report a new minimum clutch size of five for *P. modestum*, histological evidence to support production of multiple clutches and a new minimum size of 37 mm SVL for male reproduction. Also, the timing of the *P. modestum* ovarian cycle may be slightly earlier in New Mexico as compared to southeastern Arizona and northeastern Sonora.

Acknowledgments

I thank C. Thacker (LACM) and H. Snell (MSB) for permission to examine *P. modestum* and J. Giermakowski (MSB) for facilitating the loan.

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Appendix

Phrynosoma modestum from New Mexico examined by county from the Natural History Museum of Los Angeles County (LACM), Los Angeles, California, and the Museum of Southwestern Biology (MSB), University of New Mexico, Albuquerque, New Mexico: **Bernalillo County** LACM 138429, MSB 194, 1305, 1323, 1328, 8603; **Dona Aña** LACM 4356, 4357, 4359-4365, 4367-4369, 4372, 101577, 113455-113463, 113465-113472, 133250-133254; **Grant** LACM 138430; **Hidalgo** MSB 8608, 51557, 51558; **Lincoln** LACM 4376, MSB 37152; **Luna** LACM 101578, 101579, **Otero** LACM 19763, 113474; **Quay** LACM 62554; **Sierra** LACM 4373-4375, 76703, 101580, 138431; **Socorro** LACM 19693, 19756-19758, 19760, 19761, 19762, 101581, 138432-138434, 138436, 138437, MSB 2007, 8607, 72548, 21008; **Valencia** MSB 72552.

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An Exploration of the Lizard Community at Homolavi State Park with Notes on Predator Signaling in Plateau Fence Lizards

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During the summer of 2001 and 2003 through 2005 we assessed the lizard community of Homolavi State Park (elevation 4900 ft) near Winslow, Arizona. The brief visit in 2001 revealed the presence of the stunning eastern collared lizard (*Crotaphytus collaris*) and the observation called for further investigation.

The park is situated in high cold desert near the southern rim of the Colorado plateau. The topography includes flat scrub fields punctuated by large boulder-concretion hills. Collared lizards were never seen in abundance and were usually stationed atop the boulder hills, with some occasionally venturing into nearby shrubs. We found the farthest afield collared lizard in a tall, dead shrub, about 50 feet from the boulder hills. That one gave me a spirited chase when I attempted to photograph it. One collared lizard, observed by us in 2004, and doubtlessly male, possessed a nearly pure-white head with only very pale tan reticulation, a canary yellow nasal area, and a robin's-egg blue throat and ventrum. No other collared lizards in the area in 2003 or 2005 showed such striking coloration. Most other males had pale gray to white heads masked by heavier yellow-brown mottling while ventral surfaces were more greenish blue. This observation shows some underlying genetic variability in this population of undetermined size.

Occurring with eastern collared lizards and probably functioning as prey items for them were common side-blotched lizards (*Uta stansburiana*). Because these lizards possess excel-

lent crypsis within the boulder hills, population estimates for this lizard were difficult but there must have been hundreds of them. Side-blotched lizards were never found outside of the boulder hills and one likely reason for that was the fairly common occurrence of long-nosed leopard lizards (*Gambelia wislizenii*) among the shrubs of the lowlands. These attractive lizards are proficient ambushers. In order to estimate leopard lizard population density on the uplands near the headquarters, Mary observed at a distance of 20 feet, while I struck shrubs with a heavy stick. Together we managed to reveal one lizard per five shrubs, or about a lizard every 8 m^2. While leopard lizards may not be very common here, one factor that may impinge upon population size and stability is that leopard lizards are most often hit by cars on the Park's entrance highway (park naturalist communication).

Rare sightings of other lizard species did occur on or near boulder hills some distance from the headquarters complex. The first in downslope talus on a boulder hill was a single greater short-horned lizard (*Phrynosoma hernandesi*) found quiescent in the early morning chill. The next rarity was a single pale and ghost-like desert spiny lizard (*Sceloporus magister*). This lizard remained stationary as I photographed it but then scampered beneath a nearby shrub. Due to their size, adult desert spiny lizards probably feel safe from leopard lizard attack.

At the Park Service headquarters a small population of plateau fence lizards (*Sceloporus tristichus*) occupied a gravel area near landscaped areas and also near a faucet used for watering landscape plants. In early June 2003 the park naturalist took us for a headquarters "grounds" tour and just outside the station's back door, a lone plateau fence lizard was basking. While caught between us and the station's stone wall, this lizard looked at our legs, stood erect, slightly raised its right foreleg (the one closest to us), and arched its back. The station naturalist commented on how odd it was that the lizard was showing cooling behavior so early in the morning. I read its behavior as predator signaling as according to Dial (1986) and Leal (1999).

To further test this interpretation of lizard behavior we walked tangentially by an open area behind the headquarters where dozens of these lizards bask and documented lizard reactions to our approach in a methodology similar to that described in Dial (1986). Immediately on walking toward lizards, each made eye-contact. When we approached to within two meters, lizards stood up with distinctly arched backs, occasionally lifting whichever foreleg was visible to us, and several lizards raised their tails to an angle of elevation of 10–25 degrees. If approach continued, the lizards ran in an arc away from us until they were beyond a three-meter radius. We observed back arching and to a variable degree the other associated behaviors on every approach within three to four meters. Lizards never hid behind shrubs or area rocks unless we continued the pursuit.

In several ways this behavior is similar to the predator signaling response reported for other iguanid lizards such as the greater earless lizard (*Cophosaurus texanus*), reported by Dial (1986) and for the Bonaire whiptail lizard (*Cnemidophorus murinus*) reported by Cooper et. al. (2004) and may derive from defensive and aggressive behaviors described for this species and congenerics by Carpenter (1962) and Vinegar (1975).

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What You Missed at the February Meeting

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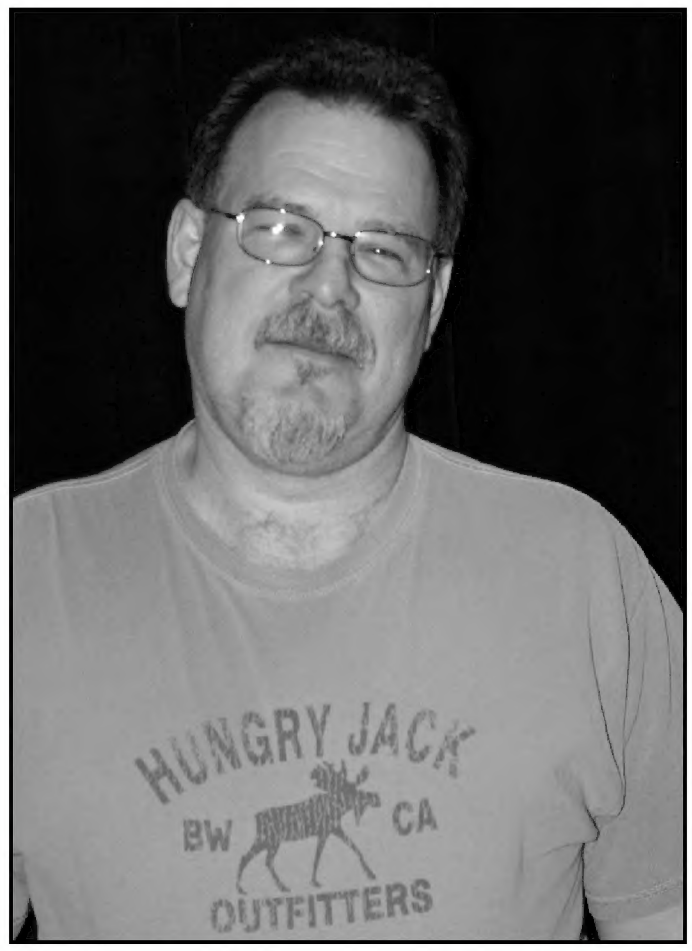
I don't want to have Mike Pingleton speak at any more of our meetings. No, let me correct that. I don't want to have to write any more about Mike speaking at our meetings, or maybe I just don't want to write any more about Mike. I wrote about his July 2010 talk (Bull. Chicago Herp. Soc. 45(8): 128-131, 2010) and I heaped him with well-deserved praise, so what new will I say about him now? He's an author, poet and field-herper, and those are just some of his avocations. His photography is exceptional and his narration is compelling. His multitude of friends attests to his personality and he is always easy to be around. He approaches life with a grace and ease that only makes me jealous, and certainly belies his list of accomplishments that reflect his over-achieving life style. It would seem that I could easily hate Mike just because of how much he's accomplished and how worthless that makes me feel, but I can't because he is just too nice a guy. He's always mellow, unassuming, and a pleasure to hang with. No wonder he's invited to join so many herp trips. If he were just a little better, people would be paying him to join them.

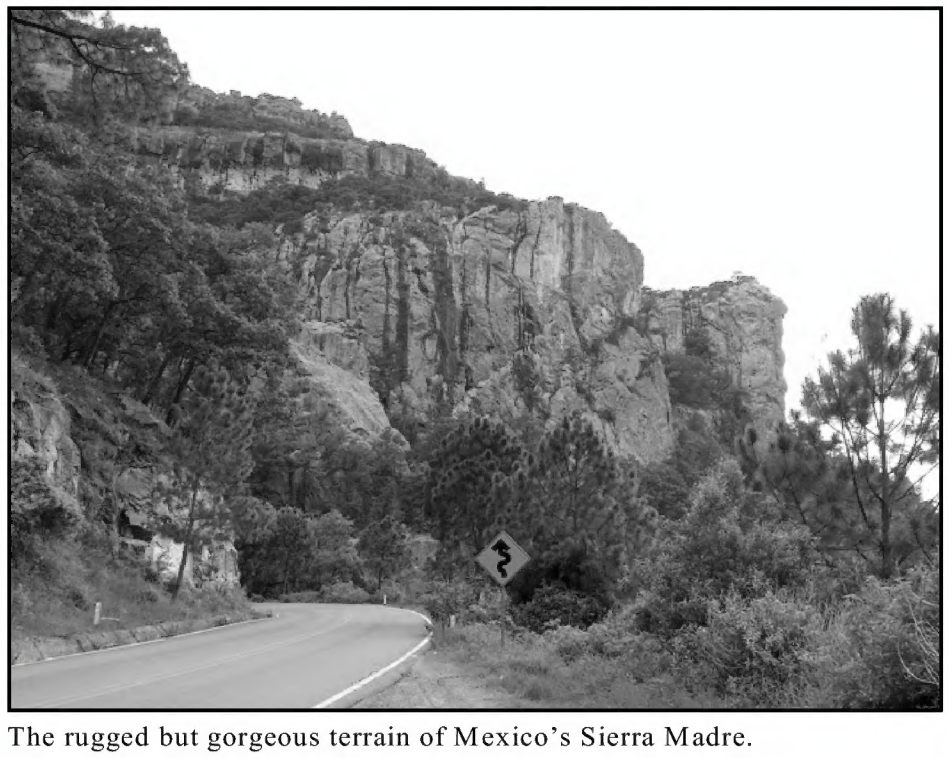


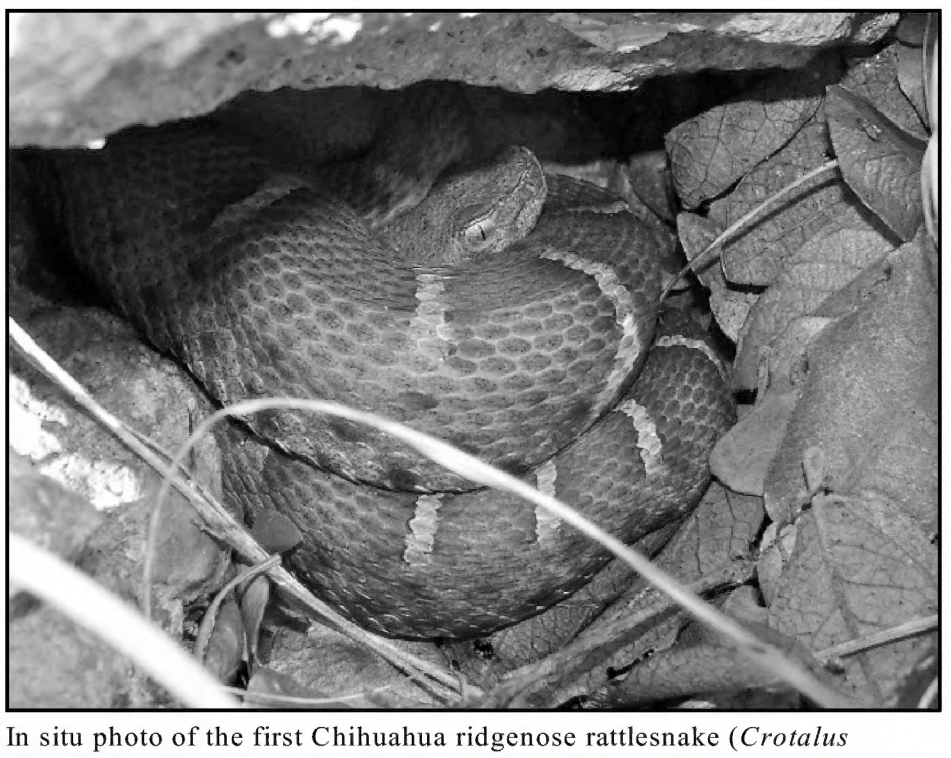
Mike Pingleton. Photograph by Dick Buchholz.

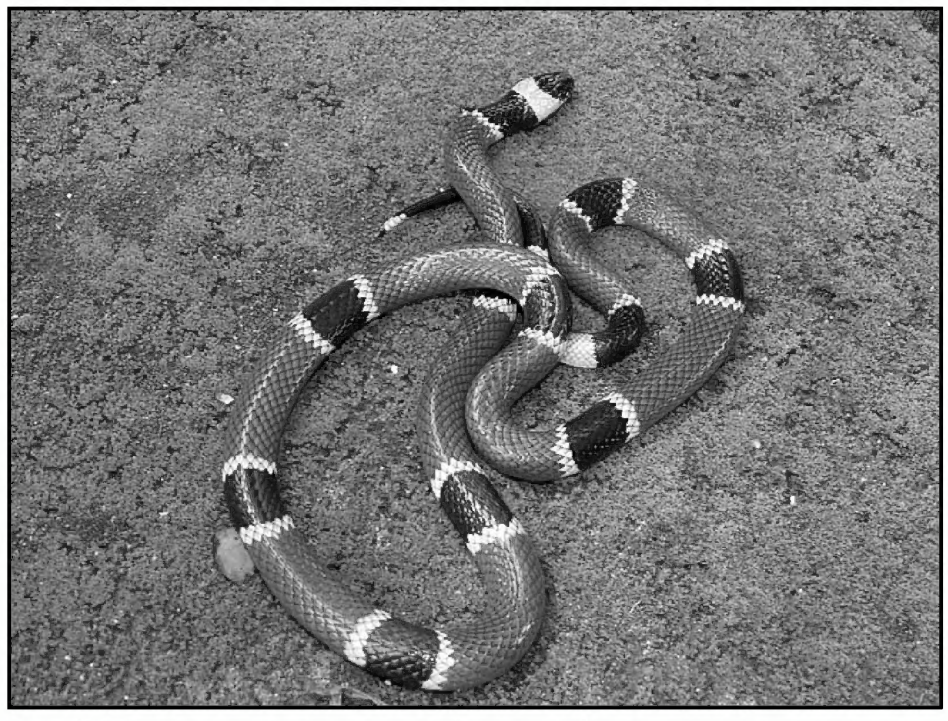
So visit Mike's blog (pingleton.com). Explore his writing and photography. You will be impressed. Last visit Mike didn't want to do the standard travelog but this meeting he talked of his trip to Mexico and showed us that he can deliver a travelog with the best. With wit and aplomb Mike took us on an eight-day trip, showing not only great photography, but immersing us in the trip with intriguing asides and glimpses of local culture. He titled his talk "The Treasure of Sierra Madre."

Mike led off with how his first trip to Mexico started with an invitation from a field herping buddy, a flight to Tucson where he joined six others, the rental of three cars and the long eight-hour drive to the first stop at Yécora to look for montane rattlesnakes. Yécora is not the most picturesque of Mexican towns and the King Hotel was not the most welcoming of inns, but for Mike, who is use to camping on his field trips, it was relatively luxurious. I guess his photo didn't do it justice. Road cruising that night yielded a Chihuahuan earth snake (*Geophis dugesii aquilonaris*), a pretty little white-banded black snake that's an uncommon find in Sonora. A photo of a Pemex gas station indicated the breakfast place the next morning. Mike describes a true herper's breakfast as bad gas station food and bad gas station coffee. The three cars set off into the mountains where the success of that foray was displayed as photos of not one but two Chihuahua ridge-nosed rattlesnakes (*Crotalus willardi silus*) under the same rock. A juvenile black-necked garter snake (*Thamnophis cyrtopsis cyrtopsis*) and juvenile Mexican lyre snake (*Trimorphodon tau tau*) were followed by a Sonoran night snake (*Hypsiglena chlorophaea chlorophaea*). A Sonoran mud turtle (*Kinosternon sonoriense*) and a little narrow-mouthed toad (*Gastrophryne olivacea mazatlanensis*) added some variety to the snakes. More exploration yielded red-spotted toads (*Anaxyrus punctatus*) and a Madrean treefrog (*Hyla eximia*); the latter contributed to Mike's passion for photographing calling frogs.

Mike adds bits of interesting facts to his talks. For instance, the skin folds on the heads of narrow-mouthed toads cover their eyes if the ants they try to eat get a bit too aggressive, and most of the time the dorsal scales of Mexican black-tailed rattlesnakes (*Crotalus molossus nigrescens*) are unicolored, giving them their characteristic mosaic patterns, and on roads toads


The rugged but gorgeous terrain of Mexico's Sierra Madre.


In situ photo of the first Chihuahua ridgenose rattlesnake (*Crotalus willardi silus*) the party found.



Found in the town of Alamos, a birder's paradise in winter, but a herper's paradise in August. Clear-banded coral snake (*Micrurus distans distans*).

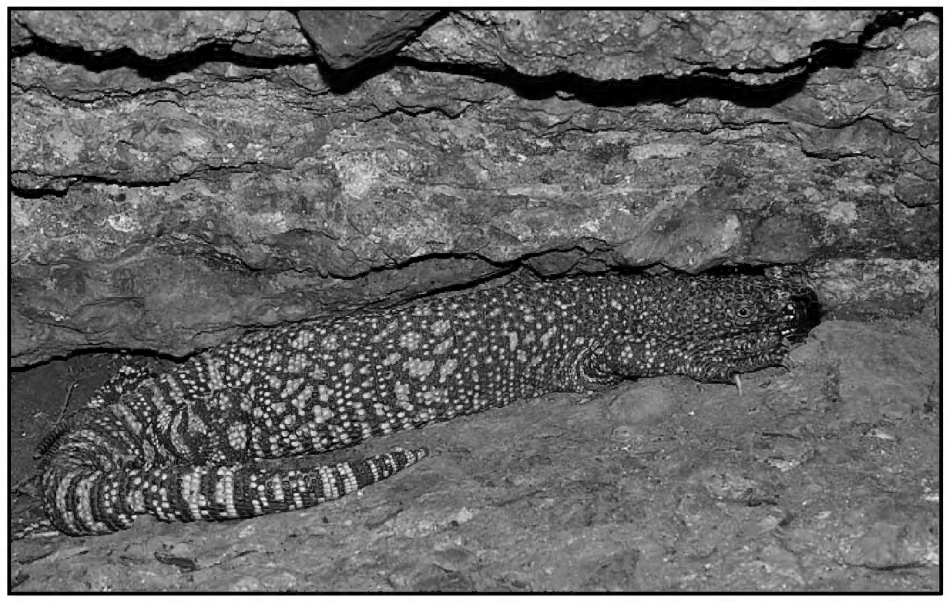
Rancho Acosta: "hot breakfast, swimming pools and boa constrictors." And five lifers before they reached their rooms!

Probably not as happy as he looks. Mexican monkey frog (*Pachymedusa dacnicolor*).

If you were a lizard you wouldn't be laughing. Brown vine snake (*Oxybelis aeneus*).

One of the high points of the trip for Mike. Spotted box turtle (*Terrapene nelsoni nelsoni*).

Mexican west coast indigo snake, or cribo (*Drymarchon melanurus rubidus*).



Apparently the lizards in Mexico just lie around waiting to be photographed. Rio Fuerte beaded lizard (*Heloderma horridum exasperatum*).

usually sit up while frogs lie flat. We were treated to pictures of green-soaked landscapes dotted with rocky outcrops, ominous photos of a hanging effigy in the middle of nowhere, and an example of the shrines to the Virgin Mary that dot the Mexican countryside. As the group headed toward the final destination of the trip, Mike spotted a turtle crossing the road, but not just any turtle. Joining the many lifers that Mike had already garnered, we relished great shots of the spotted box turtle (*Terrapene nelsoni nelsoni*), an uncommon and little-studied turtle that was found in unlikely habitat.

Mike admitted that he knew little of traveling in Mexico and, like many of us, he was concerned by the reports of extreme violence in that country. He said that the group was stopped by the national police, local police, and army numerous times, but the interactions were always professional and often very friendly, though a photo of a checkpoint surrounded by machine gun revetments reinforced the seriousness of the stops. He stressed that typical interactions with the local populace were very friendly and they felt welcomed nearly everywhere they went.

They arrived at Alamos late at night and drove around the town trying to find the hotel. Finally finding it, they hurried to deposit their bags and return to road cruising, but managed to get distracted simply walking to the rooms. Mike showed photos of a marbled toad (*Ollotis marmorea*), Sinaloa toad (*Ollotis mazatlanensis*), Mexican treefrog (*Smilisca baudinii*), yellow-bellied leaf-toed gecko (*Phyllodactylus homolepidurus*), and Mediterranean gecko (*Hemidactylus turcicus*) all photographed before they had reached their rooms and all lifers for Mike. He showed us a beautiful clear-banded coral snake (*Micrurus distans distans*) spotted as they pulled out of the parking lot to begin their road cruise. A DOR *Boa constrictor imperator* and a colorful but unfortunately DOR Sinaloan milksnake (*Lampropeltis triangulum sinaloae*) followed, but a truly exceptional and very alive Mexican longnose snake (*Rhinocheilus lecontei antonii*) allowed me to recover from the incipient depression that road kills tend to cause.

The next morning was a revelation for Mike. Having arrived at night when it was very dark his first good look showed a gorgeous hotel with a terrific view. Even the pool had a view. Wait! A pool? A picture of the group eating a large breakfast prepared by the two women that were hired just to care for this small group showed the consternation on Mike's face as he tried to assimilate "a hot breakfast, swimming pools and boa constrictors. . . . " The juvenile boa would appear later at the hotel, but for now Mike thought he was in heaven for twenty dollars a day.

More animals graced the screen, including some spectacular moths that interested Mike, but even though it didn't seem necessary to leave the hotel, they decided to extend their herping to other locations, one being good habitat for beaded lizards. They had only just arrived when Mike walked up on a large Rio Fuerte beaded lizard (*Heloderma horridum exasperatum*). These Mexican herps seemed to be almost too easy to find! We got to see several photos of that find. As they were road cruising Mike spotted a frog crossing the road with a telltale gait that he recognized immediately as a species he had once kept. I've always enjoyed looking at monkey frogs. This one was the Mexican monkey frog (*Pachymedusa dacnicolor*). Hiring a guide, they were led to a biopreserve where the guide was involved in a radio-tracking study of desert tortoises (*Gopherus agassizii*). Driving as far as they could in their rental Hyundais, they declined a ride in the ranch vehicle in the hopes of spotting more herps as they walked into the preserve. In the heat, they came to regret that choice, but the walk in provided the first live boa constrictor and several photos of a brown vine snake (*Oxybelis aeneus*). Photos of what Mike thought to be highly unlikely desert tortoise habitat showed very dense and rocky forest, quickly followed by pictures of several of the tortoises spotted. On the way out they spotted another beaded lizard and a tortoise that seemed eager to allow Mike to take some great shots. They allowed themselves to be driven to their cars.

Back at the hotel Mike had pictures of him rescuing large quantities of toads that had fallen into an unfilled pool using a collapsible fish net he always carries. We were treated to photos of an unusual reduced-melanin black-necked garter snake, an amusing head-on shot of a brown vine snake, and another of the many highlights, a Mexican west coast indigo snake (*Drymarchon melanurus rubidus*). And, of course, gorgeously scenic habitat shots. He ended with a sunset shot of a distant mountain framed by organ pipe cactus.

As always, you're cheated if you have to rely upon my articles to convey our presentations. You missed the subtle blend of amateur investigator and professional presenter that Mike brings. He prepares his talks well enough that they flow smoothly and unforced. Scientific names usually roll off his tongue without the need to check his notes. Humor is frequently inserted and he's not afraid to mock himself. I can't convey his gesticulations as he describes hand cranked car windows and monkey frogs crossing the road nor his portrayal of his use of underwear as a sweatband (really, you had to be there). However, I think one incident reveals how Mike approaches his talks. During his presentation he was drolly chided once for not using meters instead of feet because he was in Mexico. Another wag in the audience quickly responded that we weren't in Mexico. Over the laughter, Mike quietly said, "That means I'm not doing my job." You were wrong, Mike. We were in Mexico, or as close as you could bring us. I'm sure that the next opportunity we have the pleasure of having Mike speak to us that I will go through more agony trying to think of new accolades that I can award him without repeating myself. I look forward to it.

Herpetology 2012

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

NEW GENUS FOR MEXICAN MONTANE PITVIPERS

R. C. Jadin et al. [2011, Zoological Journal of the Linnean Society 163:943–958] report that as most recently recognized, the name *Cerrophidion barbouri* (Dunn, 1919) refers to a highland species of pitviper endemic to Guerrero, Mexico, of which *Agkistrodon browni* Shreve, 1938, is considered a junior synonym. This species is rarely collected and prior to recent decades it was known from only a few specimens. Careful reexamination of nearly all known specimens of *C. barbouri* and the type series of *A. browni* revealed that both names represent valid species and the authors therefore resurrect *A. browni*. Both species are extremely variable with respect to cephalic scalation and color pattern, which has previously confounded efforts to identify them. The authors provide phylogenetic analyses using both Bayesian and maximum parsimony criteria of New World pitvipers to investigate the phylogenetic position of *A. browni* and *C. barbouri*. The resulting phylogenetic tree strongly supports a clade consisting of *A. browni*, *C. barbouri* and *Ophryacus melanurus*, which has a distant sister relationship to *Ophryacus undulatus*. Based on the deep phylogenetic divergences among these species and distinctive morphology the authors recommend that a new genus, *Mixcoatlus*, be recognized for *A. browni*, *C. barbouri* and *O. melanurus*. The generic name is derived from the Náhuatl word *Mixcoatl*, meaning "cloud serpent," a god of the Aztecs and several Mesoamerican civilizations. Finally, the authors revise the genera *Cerrophidion* and *Ophryacus* in accordance with the new classification.

FARMING OF BUTTERFLY LIZARDS IN VIETNAM

T. Hartmann et al. [2011, The Herpetological Bulletin 117: 15-18]note that trade in butterfly lizards (genus *Leiolepis*) as food items has been reported from Thailand and from Vietnam, but that the farming of lizards for food has only previously been reported from Central and South America. In spring 2009 one of the authors conducted an excursion along coastal dune habitats of Binh Thuan Province east of Ho Chi Minh City, Vietnam. Several spotted butterfly lizards (*Leiolepis guttata*) were observed in the wild, but also many were seen in enclosures in small coastal villages where they are farmed. The roofless enclosures measure up to half a hectare and are surrounded by a fence made out of corrugated metal sheets that are dug deeply or placed on top of a solid brick base. The lizards were fed on a diet of pumpkin slices and green vegetables. When for sale the animals are caught in rat traps and sold alive to local restaurants or to middlemen who sell them at local markets all over the area. The authors could not be certain if these lizards were bred at the farms or if they were wild caught animals that were fattened at the farms. The biggest farm animal seen had an impressive length of 73 cm. The biggest butterfly lizard previously documented had a total length of 55.3 cm.

AGE/SIZE DISTRIBUTION OF PYXIE FROGS

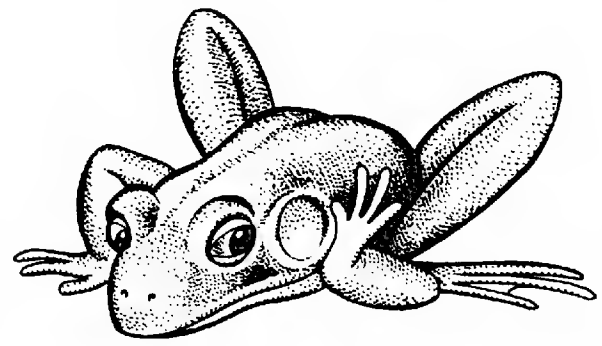
C. A. Yetman et al. [2012, The Herpetological Journal 22(1): 23-32] report that nothing is known about the age of wild giant bullfrogs (*Pyxicephalus adspersus*); yet this information has important conservation implications for this regionally threatened species. The authors quantified and compared the age, body size and body condition of adult male and female *P. adspersus* caught during spawning events at peri-urban breeding sites in Diepsloot and at Glen Austin and Bullfrog pans in Gauteng Province, South Africa. Age was estimated from lines of arrested growth (LAG) counted in cross-sections of animal phalanges. Males and females from all three sites possessed 6 ± 2 (max. 16) and 4 ± 1 (max. 11) LAG, respectively, suggesting shorter female longevity. Individuals with <3 LAG were not encountered at the breeding sites, implying that newly metamorphosed *P. adspersus* require at least three years to reach sexual maturity. There was no significant difference in the LAG counts of same-sex animals between the three sites. However, mean male snout–vent length, mass, and body condition was greatest at Glen Austin Pan, and lowest at Bullfrog Pan. The latter is possibly explained by chemical contamination of Bullfrog Pan from an adjacent disused landfill. At Glen Austin Pan males and females sampled in 2004–06 for this study were significantly shorter than those sampled at the same site in 1992–93 for a different study. Results suggest that male *P. adspersus* may live for 20 years or more in the wild, but at some peri-urban breeding sites adult life expectancy is declining. Juvenile *P. adspersus* are most threatened by terrestrial habitat transformation because they take ≥3 years to mature, during which period they may move great distances from their natal site. Differences in the size and condition of *P. adspersus* between the study sites suggests that the species requires site-specific management in addition to conservation at larger spatial scales.

NEW TREEFROG FROM ECUADOR

K.-H. Jungfer [2011, The Herpetological Journal 21(4):247-253] describes *Osteocephalus duellmani*, a new species of treefrog from the Ecuadorian part of the Cordillera del Cóndor, an isolated sub-Andean mountain range along the Ecuadorian-Peruvian border. Apparently an endemic to these mountains, it is one of the few species in the genus reaching an altitude of almost 2000 m. It is distinguished from other species in the *O. buckleyi* complex in the lack of spinous dorsal tuberculation, a relatively small tympanum, uniformly colored posterior surfaces of the thighs, lack of a row of tubercles on the lower jaw, and smooth fringes on the inner side of finger III and outer edge of finger IV. The specific name is a patronym for William E. Duellman on the occasion of his 80th birthday for his outstanding achievements in Neotropical herpetology.

The Tympanum

Requiem for a Lightweight



There was almost nothing that made him unique. He wasn't the prettiest specimen. Far from it, he was ugly compared to others of his kind. In spite of that, he was labeled cute often enough to make me a little envious. He was voracious, but they all are. He was on the larger side for his kind, though nowhere near a record breaker. Apparently fearless, I don't remember him ever backing down from any threat. Once I found the cat on the outside of the cage looking in and him on the inside staring the cat right in the eye. I wondered which animal wished harder for the glass to disappear. He knew he could take that cat if he just had the chance. He'd come to the front of the cage anytime anyone walked by, always ready to eat, but I think sometimes just to look. He would eagerly snatch food from a hand, often with such speed that it had the presenter screaming and leaping back. He died last week.

I knew that death was close. I had stopped taking him to shows a long while back. In spite of eating well he lost weight. He had trouble lifting one leg. He moved slower. But he always responded when I opened his cage. Maybe I should have euthanized him, but who knows what a tiger salamander is feeling?

Check the records for the average life span of a tiger salamander and you'll find a range from 10 to 25 years. He was an adult when Ron Humbert presented him to me, and I'd had him for 12 years. I forget where Ron got him. The tiger was replacing salamander larvae that Ron had given me. My kids were young and I wanted them to observe that marvel of amphibian life, metamorphosis. I could have sworn that the cats could not reach the top of that dresser, but I was wrong and the larvae paid the price. Ron understood that things don't always go right when you keep animals. We acquired the tiger salamander as a consolation prize. The salamander was not the only animal I would obtain through Ron's generosity, but he was one of the earliest.

My collection of animals grew, and I started keeping other salamanders and frogs. But the tiger remained the king. He would always snatch that wax worm from the fingers of the slightly trepid child, giving all of the observers a start and creating a cacophony of cries to be the next wax worm dispenser. Teenage girls would inevitably mention how cute he was, while his only thought behind that built-in smile was probably, "Feed me." As he sat in his display cage he inspired hundreds of questions about salamanders and all amphibians. My son could hold a group enthralled as they crowded around the little two-and-a-half-gallon display cage and he waxed eloquent about his favorite salamander. Every once in awhile a particularly avid child, at the end of show and always with the permission of their parent, would be able to wet their hands and carefully lift the critter into his traveling container. That amphibians are slimy was impressed upon them forever.

I try not to anthropomorphize my animals. I rather agree that when we force our feelings and thoughts into the mind of an animal we cheapen the variety and meaning of the responses an animal can have that have no correlation to human cognition. But it's hard to avoid feeling a kinship to animals that we've interacted with so much. The tiger salamander didn't want to be put on display, but he handled it like a pro, and in doing so he educated many, many people. I didn't shed a tear when I found him lying immobile in his cage. Really, I didn't. That happened as I wrote this. **John Archer, j-archer@sbcglobal.net**

Unofficial Minutes of the CHS Board Meeting, February 17, 2012

The meeting was called to order at 7:44 P.M. at the Schaumburg Public Library. Board member Jason Hood was absent.

Officers' Reports

Recording Secretary: The minutes of the January 13 board meeting were read, corrected, and accepted.

Treasurer: The January financial report was presented, discussed and accepted.

Membership Secretary: Mike Dloogatch hopes that the recent increase in memberships continues. He read the list of newly expired memberships.

Vice-president: Cindy has confirmed speakers through to the July meeting and for October.. She is working on filling the remaining months.

Publications Secretary: Aaron LaForge has an event calendar up on the web site, and will update the speaker info.

Sergeant-at-arms: Jim Foster reported that the attendance at the January meeting was 45.

Committee Reports

Shows:

- Notebaert, first full weekend of each month. Josh Chernoff is coordinator.
- Chicago Kids Expo, March 3,4. Dick Buchholz will organize.
- Project Exploration Dino Dinner, March 9. Jenny Vollman will coordinate.
- Reptile Rampage, Lake Forest, March 11. Rob Carmichael runs this event.
- Family Pet Expo, Arlington Racetrack, March 16–18. Dick Buchholz and Jenny Vollman.
- NARBC Tinley Park, March 17 & 18. Lawrence Huddleston will manage our table.

Update: Great Lakes Pet Expo had an incredible year – attendance: 10,500 people!!

Reptilefest: Petsmart is on board as a sponsor, advertising is proceeding well.

Grants: The committee met in January, and awarded 12 grants.

Old Business

Extra General Meeting: A special weekend meeting of the CHS will be held on Saturday, June 16, 5:00 P.M., at the Tyner Center, 2400 Compass Drive, in Glenview. The speaker will be Chip Cochran, giving a presentation on his rattlesnake research. Cold food will be allowed, and hiking trails are available. More details to follow.

New Business

March and April board meetings: Because of the show schedule in March, the date of the board meeting has been changed to March 23, The meeting will be held at Wildlife Discovery Center. The normal date of the April board meeting would conflict with ReptileFest. Because of this there will be no board meeting held in April.

Senate Bill 3264: There was much discussion regarding this proposed change to the Illinois Dangerous Animals Act and its possible consequences, as well as what our response to it should be, both as a Society and individually.

Website promo: The ad that has occasionally run in the *Bulletin* promoting the CHS website needs to be updated. Mike will send a PDF of the ad to anyone interested in working on it.

Speaker gifts: Jessica Tschampa has made key chains to be given to our upcoming speakers.

Honorary membership: Linda moved to make Dotty Humbert an honorary CHS member in recognition of all the Humbert family did for the CHS over the years. Lawrence seconded, and after discussion, the motion passed unanimously.

Round Table

Deb has a new dog, Cisco VonSchnitzel.

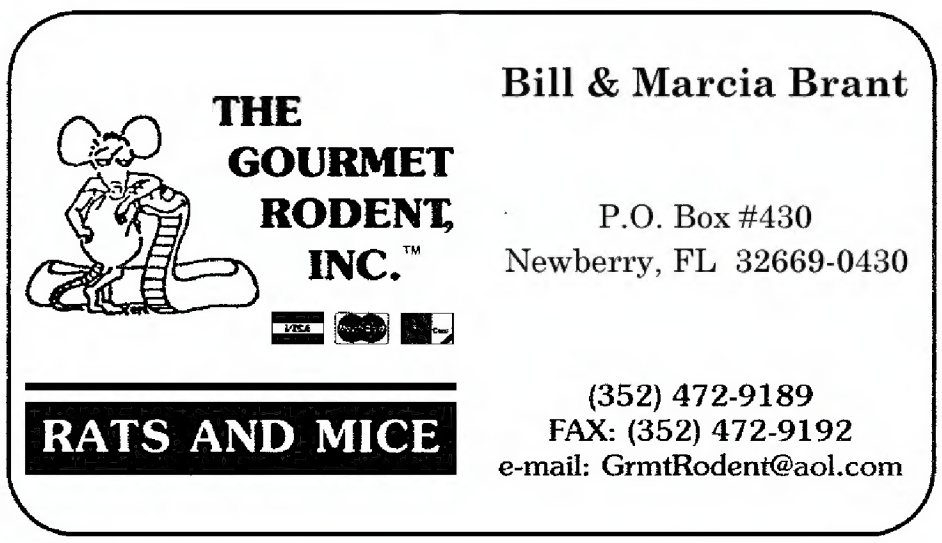
Andy received the renewal application from our insurance agent, and we have been advised that any vendors at ReptileFest should have their own insurance, and we should be named as an additional insured on their policies.

Jessica will have a table at NARBC.

J.T. Turingan just launched a new phone app, and would like to link to the CHS website.

The meeting was adjourned at 9:24 P.M.

Respectfully submitted by recording secretary Jenny Vollman



Advertisements

For sale: rats and mice—pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, *THE GOURMET RODENT*, PO Box 430, Newberry, FL 32669-0430, 352-472-9189, E-mail: GrmtRodent@aol.com.

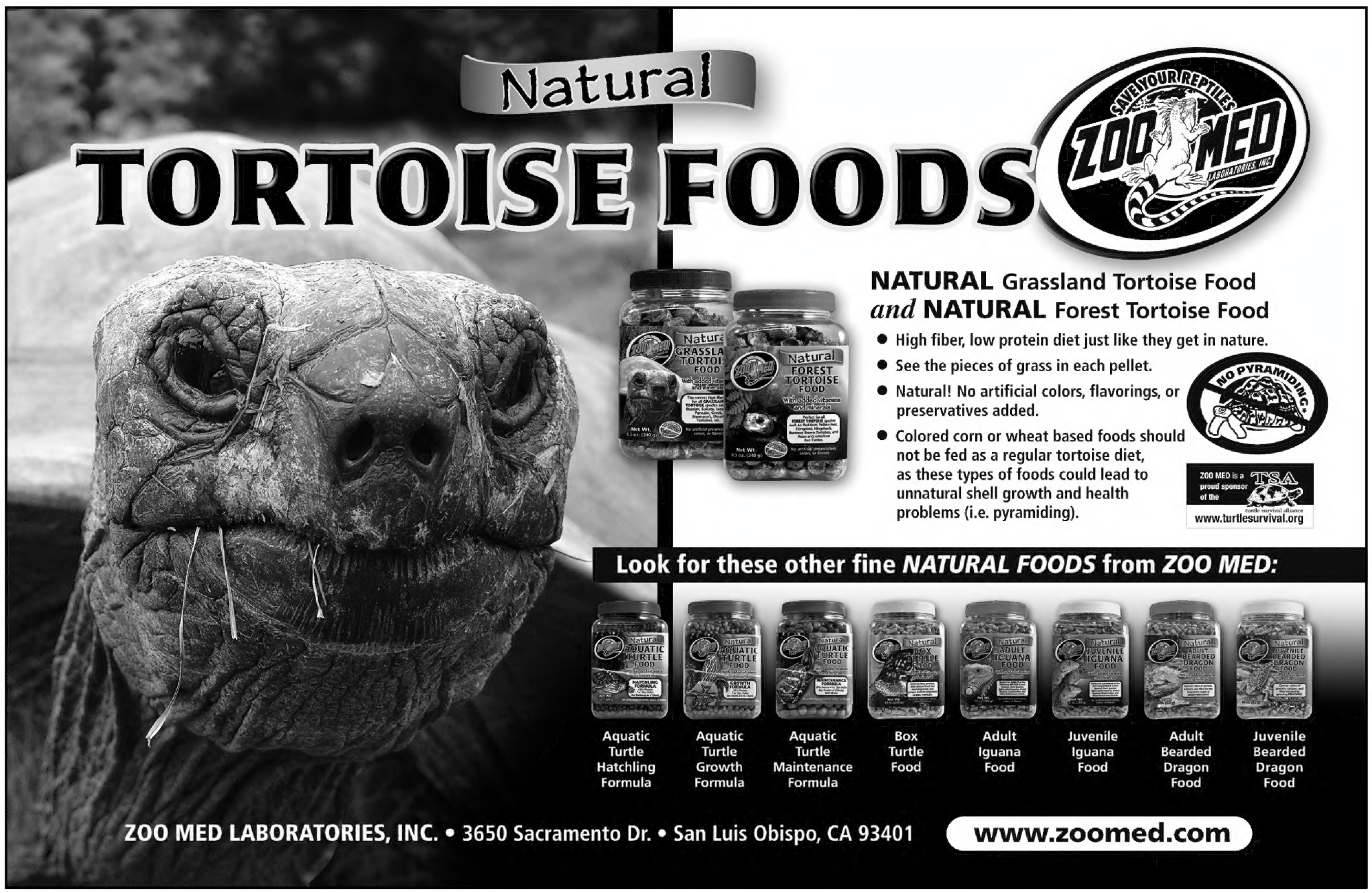
For sale: from **The Mouse Factory**, producing superior quality, frozen feeder mice and rats. Our mice and rats are vacuum-packed to greatly extend freezer life by reducing freezer burning and preserving vitamin and nutrient content. We feed our colony a nutrtionally balanced diet of rodent chow, formulated especially for us, and four types of natural whole grains and seeds. For a complete price list please visit our web site, www.themousefactory.com. We accept all major credit cards, PayPal or money orders. Call us **toll-free** (800) 720-0076 or send us an e-mail at info@themousefactory.com. Write us at PO Box 85, Alpine TX 79831.

For sale: **high quality frozen feeders**. Over a decade of production and supply. Seven sizes of mice availabe: small newborn pinks up to jumbo adults. Prices start at $25 per 100. Feeders are separate in the resealable bag, not frozen together. Low shipping rates. Free price list. Kelly Haller, 4236 SE 25th Street, Topeka KS 66605, (913) 234-3358 evenings and weekends.

For sale: Australian herp books. *The Cold-Blooded Australians* by Gunther Schmida, 1985, 208 pp. (8½ × 11½" pages), over 280 outstanding color photographs, many full page and some double page, of reptiles, amphibians, and fish in their natural habitats. The book is organized by geographical areas. Geckos, skinks, agamids, monitors, pythons and elapids are a few of the many families described and illustrated. A good book if you are considering where to go herping in Australia or if you want to get a picture of what the habitats look like of the Australian species you are keeping. Dust jacket, hardbound, $45; *Australian Reptiles & Frogs* by Raymond Hoser, 1989, 238 8½ × 11½" pp., 631 color photos of herps and their habitats, range maps, bibliography, info on captive husbandry, conservation, reptile photography. Dust jacket with mylar cover, hardbound, $99; *Harry Frauca's Book of Reptiles* by Harry Frauca, 1966, 100 pp., l00 b&w and l2 color photos, contains experiences collecting Australian reptiles including carpet python and lace monitor. Dust jacket with 3 tears, otherwise excellent condition, hardbound, $35. All books in excellent condition unless described otherwise. Books sent postpaid. William R. Turner, 7395 S. Downing Circle W.; Centennial, CO 80122. Tel. (303) 795-5128; e-mail: toursbyturner@aol.com.

Herp tours: **Costa Rica herping adventures**. Join a small group of fellow herpers for 7 herp-filled days. We find all types of herps, mammals, birds,and insects, but our target is snakes. We average 52 per trip, and this is our 10th year doing it. If you would like to enjoy finding herps in the wild and sleep in a bed at night with air-conditioning, hot water and only unpack your suitcase once, instead of daily, then this is the place to do it. Go to our web-site http://hiss-n-things.com and read the highlights of our trips. Read the statistics of each trip and visit the link showing photos of the 40 different species we have found along the way. E-mail at jim.kavney@gmail.com or call Jim Kavney, 305-664-2881.

Line ads in this publication are run free for CHS members—$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to mdloogatch@chicagoherp.org.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UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, March 28, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. The speaker will be **Marisa Tellez**, a Ph.D. candidate in biology at UCLA. Marisa's topic will be "The Good, the Bad, and the Ugly—Investigating the Interaction between the American Alligator and Its Parasites." Marisa's research is the first in-depth study to investigate the relationships between a crocodilian and its parasites.

Speaking at the April 25 meeting will be **Doug Hotle**, curator of herpetology at the Rio Grande Zoo in Albuquerque, New Mexico. Doug will speak about the Albuquerque BioPark's Native Species Recovery Program.

The regular monthly meetings of the Chicago Herpetological Society take place at Chicago's newest museum—the **Peggy Notebaert Nature Museum**. This beautiful building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

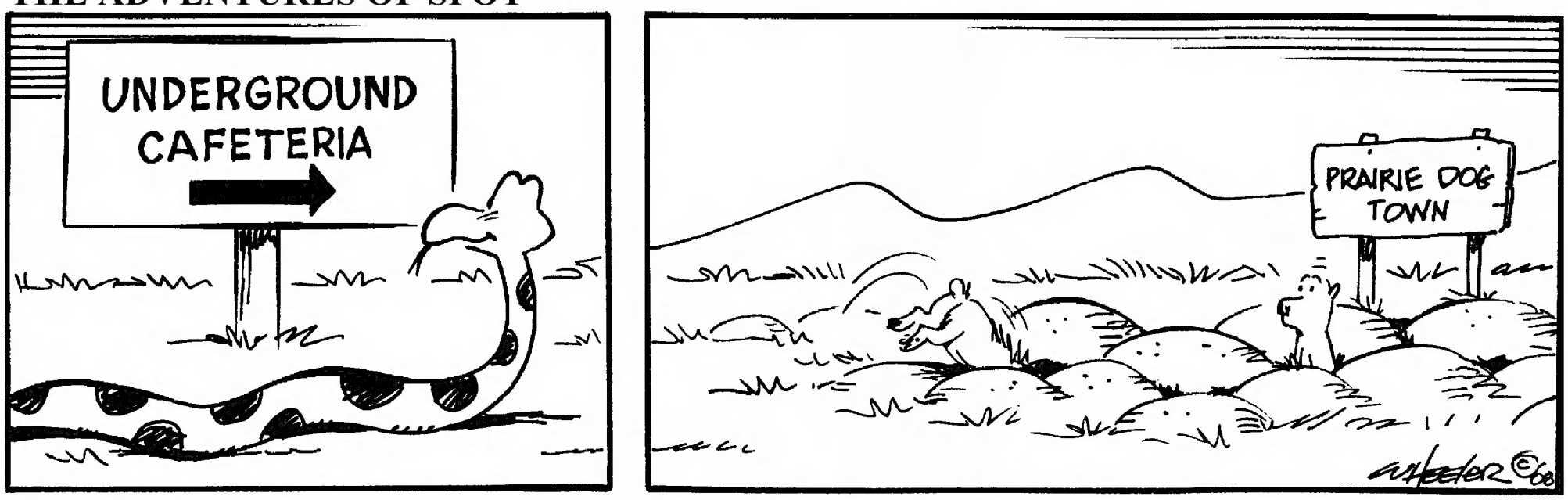
Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the next board meeting, to be held at 7:30 P.M., May 18 , in the adult meeting room on the second floor of the Schaumburg Township District Library, 130 S. Roselle Road, Schaumburg. (Note: no April board meeting due to ReptileFest.)

The Chicago Turtle Club

The monthly meetings of the Chicago Turtle Club are informal; questions, children and animals are welcome. Meetings normally take place at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info visit the group's Facebook page.

THE ADVENTURES OF SPOT



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